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A

GUIDE

THROUGH

PEAK'S HOL

WITH A DESCRIPTION

OF THE

CURIOSITIE

OF

CASTLETON.

PRICE ONE SHILLING.

STOCKPORT:
PRINTED BY S. DODGE, LITTLE UNDERBA

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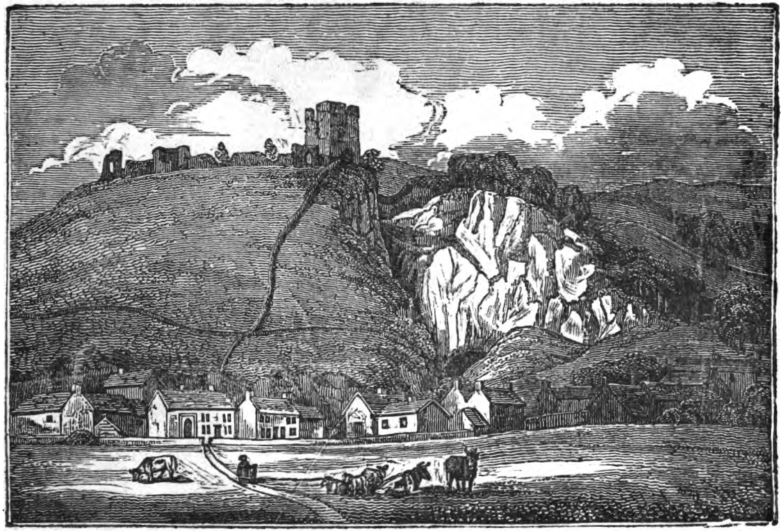

CASTLETON CAVERN AND CASTLE.

A

SHORT DESCRIPTION

OF

Caſtleton, in Derbyſhire;

ITS NATURAL CURIOSITIES,

AND

MINERAL PRODUCTIONS.

BY J. M. HEDINGER.

SEMPER SCIENTIÆ JUVENTUR.

TWENTY-SIXTH EDITION.

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DEDICATION.

TO HER GRACE

THE DUCHESS OF DEVONSHIRE.

The very peculiar attention YOUR GRACE has long shewn to the Mineral Kingdom, induces me to place the following short Essay under your patronage.

Your wish of promoting the Science of Chemistry, connected with Mineralogy—your intimate knowledge of the valley treated of—and the general beneficence of your character, leave little doubt but you will excuse the liberty I take, more especially when I assure YOUR GRACE that assistance to the indigent is the principal motive to the undertaking.

I have the honor to be,

With the greatest respect,

YOUR GRACE'S

Most devoted and humble servant,

J. M. HEDINGER.

PREFACE.

At this period, when Mineralogy forms the study equally of the Gentleman and the Artist, the following short account of a neighbourhood explored by men of science, will I trust, prove acceptable to that part of the Public who visit Derbyshire; a County where Mineralogy may most certainly be better understood than in any other in the Kingdom, from the different minerals with which it abounds, the variety of its strata and their singularly exposed situations: as it will be read generally by those of liberal minds I leave it to explain itself. My principal wish is to be in any degree useful to the Traveller, and to assure the Public, that Castleton is one of the most healthful and interesting Villages in the Kingdom: its fertility so much surpasses the neihgbourhood, its produce of every necessary of life so abundant, and its air so pure and wholesome, that it may be truly called the Garden of the Peak.

A
SHORT DESCRIPTION
OF
CASTLETON.

The approach to *Castleton*, by the winding Gate, commonly called the *Winnets*, is down a very steep hill, a mile in length, and rendered passable by the serpentine direction of the road.

Here nature presents herself in her rudest forms: down the road the prospect is bounded by the rugged rocks, projecting in the most romantic manner, bare and steril. On each side, these tremendous mountains are many hundred feet high; some steep some overhanging, and in various forms, as if separated by a convulsion of nature. These mountains are composed of Lime-stone, full of marine exuviæ. The parts which retain their primitive form, are the steep rocks, and those which overhang, where the decomposition (from the atmosphere) cannot retain. Those parts which are most horizontal, and where the decomposed Lime-stone can remain, are extremely productive of short grass, and afford a most excellent pasture for sheep.

While the traveller is meditating on his safety, and anxiously wishing for his arrival at the bottom of this declivity, he is most agreeably relieved by the sudden view of the valley: the lofty mountains no longer confine the sight, but a beautiful picturesque, and fertile valley, of four miles in length, appears encircled by a chain of mountains. Here traveller stop and collect thyself! View this fertile valley as one of the greatest gifts of Providence, who has bestowed on the inhabitants of this place all the climate can produce: this valley is well watered, the rivulets produce the finest trout, and the land is very productive.

It is my intention to give a short description of this place, its mineral productions, &c., which nature has rendered singular. I shall not enter into minute details on any subject, but what may prove amusing to the traveller, and instructive to the scientific; and will, I hope, be the means of making this healthful place more generally resorted to, and its natural curiosities more noticed.

In the valley is the village of Castleton, which takes its name from the Castle on the Hill; also, the villages of Hope and Brough. The mountains to the north are composed of Grit-stone and Shale; those to the south are Lime-stone: its waters and springs are numerous, and are particularly pellucid and agreeable.

I now return to the approach of this village, and shall endeavour to give a just description of objects which must strike the traveller in so impressive a manner as to cause a source of inquiry within himself, In coming down the before-mentioned road, the Winnets, the traveller perceives Mam Tor, or the Shivering Mountain, on the left hand rearing its lofty head above the rest, and of a singular form; its height is full 1300 feet above the level of the valley. The perpendicular appearance of the face of this mountain will cause some inquiry in the mind of every intelligent observer. Its history is pleasing.

The stratum of this rock is Shale and Grit-stone, The Shale, so subject to decompose by the action of the atmosphere, has been the cause of one part of it separating from the other, by which means the valley below has been covered for a considerable distance. At the foot of this mountain, before it was separated, were ploughed fields, trees, and buildings, which by its separation from the present remaining part, were all overwhelmed for the distance of half a mile, and now every day proves the truth of the assertion; as in mines under its foot, at the depth of 100 yards, trees have been found entire, the situation of which clearly proves they have existed in the valley, or on the side of the mountain before its separation. It is commonly called the Shivering Mountain; the reason is, after long frosts, heavy gales of wind, rain, &c., large quantities decompose and fall from their original stratum, which greatly increases the mass below, the substance sometimes fall in such quantities as to be heard and felt at Castleton.

On the summit of this almost perpendicular mountain is a spring of fine water, and near the top of it appears an entrenchment or boundary line, probably cut by the ancients. The Shale of this mountain is much impregnated with Vitriol of Iron, and the Gritstone is composed with Mica, which serves to indicate it to be of the primitive origin.

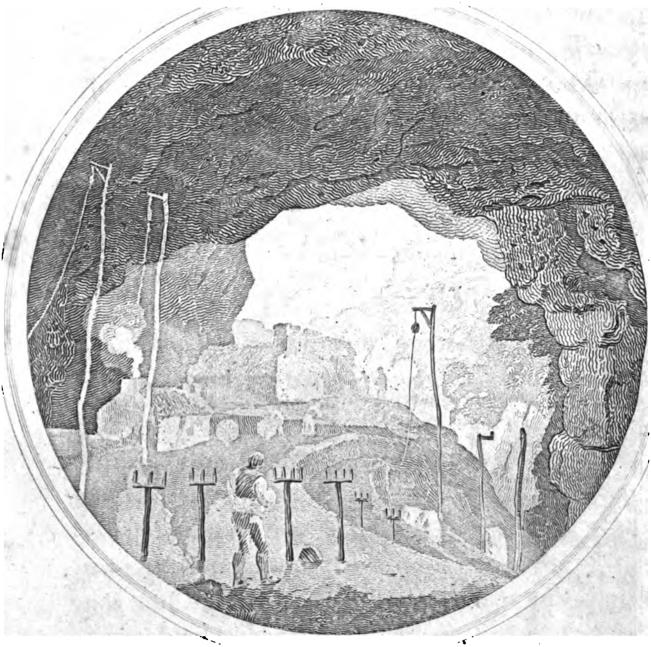
At the foot of Mam Tor, and near it to the south is the famous mine called Odin, a rake or perpendicular vein of Lead Ore, worked orizontally, more than a mile. The top of the vein is in the Shale, but the Ore is generally in the Lime-stone. This mine receives its name from the Saxons, who formerly worked in it, and most of the mineral terms used here are of Saxon origin. The traveller who wishes to gratify his curiosity, by going through the works of this mine so instructive in natural history, from its situation, will reap much information by inquiring at the shop of Mr. E. NEEDHAM, Peverel Museum, opposite the Castle Inn, Castleton; and if a guide be required to assist the research of a stranger, a civil and intelligent one will be supplied.

The Lead Ore produced here is Potter's Ore, and yields about three ounces of silver to a ton of lead, but the quantity of the Ore differs in different parts of the mine. This mine produces fine Calcareous Crystallizations. Blend Barities, Crystallized Fluor, Spar, Sulphate of Iron, Manganese, &c.

The Mountain opposite the Odin Mine, and to the south, reaches the Winnetts, and forms the mountains on the left hand, as you approach this place. It commences near Mam Tor, at a small distance south of Odin, and is composed of very different substances, viz:—Lime-stone full of marine exuviæ; it indicates in a very satisfactory manner, violent convulsions of nature. Beyond Mam Tor, when a view is taken from the Winnetts, appears a singular eminence, called Lose Hill; and on the summit of the distant range of mountains beyond the dale, is seen a very remarkable knob, called Win Hill; names derived, as tradition reports, from the event of a battle fought by two contending parties which had been posted at those places. The two mines in which is found the beautful Fluor Spar, commonly called Blue John, are named the Troy Cliff, and the Water Hull. This gem of nature is peculiar to this place, and found on this mountain only, in mines worked alone for it. The superb ornaments made of it are living testimonies of its unrivalled beauty. The massy Crystallizations the tints of color from the Topaz to the richest Amethyst and Ruby, are beautfully displayed in sportive veins, that form the most agreeable festoons: the sudden contrast at once astonishes and surprises the beholder.

Opposite to the mountain before described, and on the right hand side of the road, is a public-house situated at the entrance of the Speedwell and Navigation Mine, so called on account of its waters being collected, so as to float boats to convey Ore, and otherwise render the work less laborious. This mine was originally driven for Lead Ore, in a north and south direction, to cut across the general run of veins in this county, which cost the adventurers the enormous sum of £14,000 and eleven years' continued labour. The hope of gain encouraged the adventurers to proceed until so little ore was got as to render it not worth working. Its natural curiosities are as follows:—

First, you are introduced by your guide (who is a civil and attentive man) down an arch 106 steps, when you arrive at the water (which is about three feet deep) and forms the horizontal section of the mine. Here you get into the boats, which are perfectly safe, and put into motion by pushing wooden pegs in the roof, six feet asunder. Thus you are navigated through various caverns, until you arrive at the grand cavern, called the Devil's Hall, where the water forms a lake: you are here 600 feet below the surface of the earth. The height of this wonderful cavern has not been explored. On your left hand is a strong wall with a water gate in it, through which the water falls into a tremendous abyss. The fall is about 90 feet and the depth of the abyss is about 320 feet standing



THE PEAK CAVERN.

water, it is worthy of notice, that during the time this mine was worked, the refuse was thrown down the abyss to the amount of 20 tons per day, for four or five years, and it has not in the least been perceived to fill up, and its depth by the plumb continues the same. This may be accounted for, by supposing the bottom of the abyss to have communication with others in different directions.

There are several other caverns of much greater extent, but very difficult of access; should the curiosity of the traveller lead him to visit them, he may be accomodated with a guide and necessaries, by applying to the landlord of the house. This mine is situated in the Lime-stone; its produce was not interesting, but it is a specimen of good workmanship.

From these subterraneous places of retreat, you are conducted back; when you will not fail to heartly welcome the approach of day, and relate the situation you have been in with mirth, pleasure, and astonishment. From this you proceed about a quarter of a mile down the road to Castleton, and at the Inn you will be sure to find an excellent larder, good wine, and good accomodations.

Here a guide for Peak's Hole, offers his services to you: and now, reader, be assured you are going to visit a Grand Wonder of Nature! You are conducted about 50 yards from the Inn, and then meet with the water, which has its source from the rocks adjoining Peak's Hole. You then proceed along the side of the rivulet, & cross it by a small bridge; soon afterwards you enter the fissure, or separation of the rock, at the end of which is the cavern. On either side, as you proceed up the back, your guide shews you veins in the Lime-stone, which run perpendicularly, and contain Lead Ore. One has been cut out, and appears as a fissure, on the left hand. The perpendicular range of the rocks before you, and on each side, strikes the mind solemnly grand; the height of that on the left is more than 250 feet. The whole is Lime-stone, full of marine materials. The entrance of the cavern next appears in view, and the mind will now be engaged in contemplating the awful structure of this grand and natural piece of architecture. View the abutment* on the left, 20 feet below the road on which you stand the springing of the arch, the arch itself, & you will say—nothing but an arch could support the incalculable weight of the incumbant strata.

The natural appearance of the entrace into this wonder of nature, is hid on the right by the huts of the poor inhabitants, who you see carrying on a manufactory for small cord, twine, &c.

The span of the arch is 120 feet, and its height from the left abutment above 70 feet. The length of the first cavern is 180 feet; in it you are shewn

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*The rock is stratified in beds of different thicknesses, which give it something the appearance of masonary.

Stalactites[*] which your guide calls Petrified Waters. and by many romantic names as Flitch of Bacon, *&c.* Near the end of the first cavern, and where you are accommodated with candles, you see on the right hand a rock detatched, many tons weight, which probably fell from the roof at the period which formed the subterraneous mansion.

From this rock you proceed (each person being provided with a candle) and soon approach a small door; here the distant light appearing from the extreme of the cavern, has a most singular effect, the whole assuming a stupendous view of a conclave. Now the passage becomes narrow and low; you then proceed stooping[†] until you come to a cavern, or hole, above the head, shaped something like a bell, which your guide calls the Bell House, from its resembling that form. Then passing along, you are shewn a line on the side of the rock, to which height the water rises in very heavy rains. Continuing to proceed stooping, you arrive at the first water, on which there is a boat;

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[*] Stalactite, vulgarly and erroneously called Water-icicle, Petrified waters, &c., is an accumulation of fine calcareous earth, which the water is filtering through the stratum it is loaded with, each drop leaving behind it a portion of the earth with which it was saturated by attraction and the cementing quality forms a substance; and which from a molacula, is increased to a Stalactite.

[†] Here permit me to warn the visitors not to alter their position too soon for fear of hurting their heads against the rock above.

the water is about two feet deep. Here the cavern has confined appearance, and the strata seems much dislocated. Your guide walks into the water, and directs you to lie down in the boat, (in which there is not the smallest danger) and in that posture he ferries you through a small aperture, just sufficient for the boat to pass, and lands you in a cavern more stupendous than the first. Here you stop until your guide ferries over the whole of the party. The extreme length of this subterraneous hall is about 250 feet, the width 200, and the height various, in some places 120 feet. On examining this wonder of nature, a small part is only seen even with an immense number of candles; the whole is formed in a stratum of Limestone, which apparently has undergone violent concussion of nature.

Leaving this cavern, you soon arrive at another water, which is much smaller than the first; over this you are carried by your guide with ease and safety being landed on the other side, you soon arrive at an aperture where water is always filtering down; this your guide calls Roger Rain's House; from this you continue to the chancel, where you are suddenly accosted by a choir of voices from the gallery above at the height of 60 feet; the illumination is novel, and pretty, and the effect of the singing is grand. Here are many detatched pieces of rocks, and the roof appears rent and broken all over; the Stalactites formed in various parts, glitter with the lights and have a very romantic appearance.

From the chancel you proceed to a fissure, called by your guide the Devil's Cellar; from which you decend gradually 150 feet, and at length arrive at the Half-way House, as your guide calls it: here is a fine little stream of pellucid water. Passing on, you proceed through three prettily formed arches by the side of a little stream of water, which you cross the roof assuming a more regular segment of a circle, until you arrive where the roof again assumes the form of a bell, and is from that called Tom of Lincoln. Onward you proceed, and at length reach the extremity of this truly Grand and Wonderful Subterraneous Mansion of Nature and are above 2250 feet from the entrance. The water here clearly proves other subterraneous communications, as the calcarious stones found in it are much rounded by attrition.

You now return, and are saluted with the effect of a Blast ‡ (a term of the miners) the explosion of which is grand, and for a while (from surprise) staggers the senses.

The return of day light, so pleasing after the subterraneous visit, is heartly welcomed by all: and here when you deliver up the remaining bits of your candles, the appearance of day-light has the strongest effect.

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‡ In mining, where the rock is so hard as not to be cut with a pick, they work a hole with a steel borer and hammer; and when it is of sufficient depth they put gunpowder in it, ram it close, and fire it off, which breaks off much of the rock, and answers the intended purpose.

Your guide now conducts you back to the Inn, where you will be refreshed by a good dinner and excellent wines, having been engaged near an hour in visiting this stupendous work of nature. At the Inn, you have a view of a venerable building, on an eminence called the Castle. This is one of the only two ancient Castles now existing in Derbyshire. It appears to have originally consisted of a plain wall, enclosing an area of moderate dimensions, with two small towers on the north side, and a Keep near the south-west corner, being a square tower, measuring 32 feet 2 inches on the out side, and 21 feet 4 *inches* by 19 feet 3 inches within the walls. It is most probable that this fortress was erected by William Peverel to whom the manor was given by William the Conqueror; though Mr King, who has given a particular account of it in the sixth volume of the Archæologia, supposes it to have been built during the Saxon Heptarchy: great part of the walls of the Keep and some remains of the other buildings, are still existing.†

The manor of Castleton is described in the Doomsday-book, as "Terra Castelli Wi. Peverel in

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† There is a view of this *Castle* in the first volume of Buck's Antiquities. plate 55.

Peche feas." This estate belonged, in the reign of Edward the Confessor, to Gundeberne and Hundine. The expression in the Survey seems to import that the Castle, which gives name to the parish, was built by William Peverel, to whom William the Conqueror had given the manor, with thirteen other lordships in the County of Derby. The Castle afterwards acquired the name of the Castle of Pec, or Peke, or Peak Castle. It was forfeited with the manor, and other possessions, by the grandson of William Peverel. King Henry II. gave them to his son John, afterwards King. During the absence of King Richard, this Castle, persuant to the agreement between Lonchamp, Bishop of Ely, and John then Earl of Morteyne, was placed in the hands of Hugh Nonant, Bishop of Coventry. Hugh Neville was appointed Governor of the Castle in 1204. In 1215 Peak Castle was in the hands of the rebellious Barons. William, Earl of Derby, took it by assault, and was made Governor by the King. Afterwards they were five other Governors or castellions, before the year 1374 when it was granted with the honor and forest of Peak, by Edward III. to John of Gaunt, and became parcel of the Duchy of Lancaster; and from that time it has decended with the Duchy. Sir Ralph Shirley, who died 1466, was a constable of Peak Castle, in the reign of Henry VII., the Castle was held under the Duchy, by Robert Eyre, Esq., of Padley; in that of Henry VIII. successively by Robert Thornhill and William Gallins; in the reign of Edward VI., by Godfrey Somersall; and in that of Elizabeth, successively by John Eyre, Esq., and Godfrey Foljambe Esq. A tournament is reported to have been held here on the following occasion:—

William (half brother of Pain Peverel) Lord of Whittington, in the county of Salop, had two daughters; one of whom named Mellet, was no less distinguished by a martial spirit than a father. This appeared from the declaration she made respecting the choice of a husband. She firmly resolved to marry none but a knight of great prowess; and her father, to confirm her purpose, and to procure a number of visitors, invited all the young men who are inclined to enter the lists, to meet at Peverel's Place in the Peke, and there precide their intentions by the use of arms; declaring at the same time, that whoever vanquish his competitors, should receive his daughter, with his Castle at Whittington, as a reward for his skill and valour. Gaurine de Meez. a decendant of the house of Loraine, and an ancester of the Lords Fitz-Warrine, hearing this report, repaired to the place above mentioned, and there engaged with the son of the King of Scotland, and also with a baron of Burgoyne, and vanquishing them both, obtained the prize for which he fought.

Peak Castle, which was a small structure, but from its situation, a place of great strength, has been long in ruins. The Duke of Devonshire has the nominal appointment of Constable of the Castle, and is lessee of the honor or manor, and forest of the Peak, of which Castleton was, till of late years, esteemed a member. The successors of the Peverels, to this day, hold courts of peculiar jurisdiction, in civil cases, through the principal parts of Derbyshire and Nottinghamshire. Its situation is uncommonly singular, the west end stands on the top, close to the brink of the high perpendicular rocks on your left, at the enterance of Peak's Hole. The east and south compartments are built on the edge of perpendicular rocks, which form a fissure called the Cave; the Castle fronts the north, and the road to it is up the steep hill before you, being inaccessable in every other direction.

The Church of Castleton (then called the Church of Peak Castle) was in 1269, given by Prince Edward (afterwards Edward V.) to the Abbot and Convent of Vale Royal in Cheshire. After the dissolution, King Henry VIII. gave the great tithes, and the advowson of the vickerage, to the Bishop of Chester, and his successors. There is a meeting-house of the Wesleyan Methodists, at Castleton.

There was formerly an hospital near Castleton, called the Hospital of the Castle of Peak, of Royal foundation, for certain paupers; and chaplain, endowed with lands valued in 1337, at £3. per annum, and four bushels of oat-meal. It was situated about half-way between Castleton and Hope.

The town of Castleton is in the Hundred and Deanery of the High Peak, and there was anciently a Market held on Wednesdays, which existed before the year 1222. There is no market, but a fair is held twice a year, on the 21st of April, and on the 1st Wednesday in October. The Saxons at one time inhabited the town, on account of the mines in the neighbourhood. The Castle was used for keeping the mine court records, till moved to Tutbury. It is built of the hardest free-stone, and must have occasioned great labour to bring the stone up to such an eminence.

An entrenchment seems to have been made from the foot of the Castle-hill on one side, forming a semicircle round the town, to the foot of the hill on the other side; the Castle having the command of the whole. It is now called the Town Ditch, and is only to be made out in particular situations.

Singular coins and curious implements have been found on the Castle-hill. The town is inhabited chiefly by miners, who, in general, are good members of society:—the mines find employment for men, women, and children.

The Cave, so called probably from many holes in the Lime-stone stratum, which form small caverns, is very narrow at its entrance, and is betwixt two steep Limestone rocks; after proceeding a short distance, the rocks are further apart. In many places may be seen veins, where small quantities of Lead Ore have been found.

This place is considerably on the assent, and from the singularity of the rocks on each side, and the richness of the soil formed by decomposition, is very productive of many novelties of botany, particularly a great variety of lichens, mosses, &c.—About half a mile up this valley is a stratum of Basalt, which appears at the surface, and an irregular formed Basalt column with crystallized Quartz, bearing the appearance of Chalcedony. There is a singular clay-like substance on the surface of the Basalt stratum, that appears very much like scoria, or half-baked clay: this stratum is of considerable thickness, and has great inclination; the mountain opposite its lime-stone. There are many varieties of Basalts in this neighbourhood, but the column before alluded to is, in appearance, texture, and hardness, the same as those of the Giant's Causeway and Staffa, though not so regularly formed.

The Toad-stone stratum differs, in general, from this column, being seldom so hard or close in texture; but many of the substances called Toad-stones, and suggested by my friend, the late Mr. Withurst, to be from volcanic origin, are decomposed, and on the most minute examination, are difficult to be accounted for :—their varieties, and the different states they are in, sufficiently prove their affinity. To the east of Castleton, and on the road to Bradwell, (a small village) are several mines worked for calamine; which produce Blend and some Lead Ore; the stratum is Lime-stone, and the veins in many places appear at the surface. At Pinder, about half-way betwixt Castleton and Bradwell, is a Lead Mine of some consequence—a species of decomposed (supposed) Toad-stone. Volcanic production is cut in abundance, and at the mine near this, called Dirtlow, the vein of Ore is in the before-mentioned stratum.

In the valley are several coagulations of small Lime-stone in masses cemented together by Stalactite; *the* water strongly impregnated with carbonate of lime—filtering through a mass of loose stone, has cemented them together, and forms something resembling the plumb-pudding stones. The shale in this part of the valley is generally the upper stratum; but as you proceed up the hill, the Lime-stone appears on the surface. Here are several kilns for burning lime; and the cliffs where the Lime-stone is blasted, for the purpose of getting stone to burn to Lime, are full of sparry veins and marine shells, and what is called Derbyshire marble—of which excellent Chimney Pieces are made; it is much harder, and takes a better polish than the best statuary.

In many parts of this valley, where two small hills are opposite to each other, I found one hill composed of Toad-stone, and the other Lime-stone.

In the middle of this valley is a large white building, which is a cotton mill, and worked by a water-wheel; on the left hand, the north side of the valley are no mines, the stratum being Grit-stone and shale. At the extremity of the valley is the village of Hope, and a little farther is Brough, where there is another cotton mill.

About three miles westward from Castleton, on the south side of the hill, is the famous perpendicular chasm, called Elden Hole, concerning which so many wild reports and exaggerated descriptions have been propagated. The credulity of travellers has often been grossly imposed upon by tales respecting its immeasurable depth. The falsehood of these tales have been proved by the dessent of a Mr. Lloyd into this chasm. He found within it vast masses of Stalactite, and reached the floor of the cave, 62 yards only from its mouth; the light from which was sufficiently strong to permit the reading of any print.—The account given by this gentleman, in the Sixty-First Volume of the Philosophical Transactions, has been confirmed by the assertions of three miners, who have been let down into it at different periods, and all whose relations nearly correspond, that it can hardly be supposed the depth of Elden Hole will again be questioned.

Should the curiosity of the traveller lead him to see Elden Hole, he may be accommodated with a guide to it, or to Bradwell, which is only two miles from Castleton, where they have lately discovered several mines, and an extensive and beautiful subterraneous cavern, which far exceeds any of the kind yet known in Britain, for the amazing quantity and exquisite beauty of its various sparry productions, incrustations, &c. on application to E. Needham, at the shop opposite the Castle Inn.

On descending 126 steps, you arrive at the bottom, whence you pass through a long lane of crystalization, into Paradise Grotto. Proceeding about 30 yards farther, you come to the Intermitting Spring—whence you ascend 13 steps into a kind of gallery; to the left of which the sparry icicles have *naturally* formed an arrangement of regular and most beautiful columns; immediately you enter into Calypso's Cave, which is grand and grotesque in the highest degree. In short, it exhibits a most natural and lively resemblance of winter, with its various scenery of hoar-frost, snow, ice, and icicles, &c.

The admirers of nature's works will enjoy the most superlative pleasure, from a sight of this wonderful cavern, of which the most laboured description could convey but a very faint idea; and the most splendid specimens of the beauties of the mineral kingdom may be seen at Mr. Needham's shop: and so long as natural beauty is admired, these ornaments will continue to be introduced into the most significent apartments.

About five miles from Castleton, by the side of the road, is a place called Barmoor Clough, is the Ebbing and Flowing Well. It is situated immediately under a steep hill, which rises to the height of about 100 feet. Close to the well is a small pool, or hollow, with very little water in it, except when it is supplied from the apertures of the well. This does not happen at regular intervals, since the flowing depends upon the quantity of rain which falls in the different seasons of the year. In very dry seasons, the well has sometimes, though rarely, ceased to flow for two, three, or four weeks together. Sometimes it flows only once in 12 hours; sometimes every hour; and in very wet weather, perhaps twice or thrice within that time. When it begins to rise, the motion of the water in at first gentle, but before the expiration of a minute, it issues very copiously, with a gurgling noise from several openings at the sides of the pool; and from this it runs off in a stream sufficient to turn the wheel of a corn mill. It continues to flow four minutes and a half, and it has been calculated that in the space of one minute, 23 hogsheads of water are discharged.

The mountains to the north of Castleton afford but poor returns for cultivation, in proportion to the valley; their stratum is Grit-stone and Shale;—the

Lime-stone stratum lies under them, but at such a depth, that the veins of Ore in that situation cannot be worked: on this side there are not many mines: in this neighbourhood is a great variety of Grit, composed of large Quartz Pebbles, some of which are crystallized with veins of Flour. Quarries are worked to obtain this Grit for building purposes; there is also an Argillaceous Grit used also for building, but subject to decompose. This Micaceous Girt splits in laminæ, has a good deal of elasticity, and is used for roofing houses. Sometimes Oxide of Iron is found with Argil in the Grit-stone; also Rotten-stone, a ferruginous substance.

The Shale or Shiver in the neighbourhood is of a dark brown colour, nearly black, and forms a thick stratum in many places. It is generally impregnated with Vitriol of Iron; some of it is more saturated with Carbonic Acid; in its stratum it is exceedingly hard, but soon decomposes when exposed to the air; it varies much in its quality and texture, and frequently contains Petrol. This stratum abounds with martial Pyrites, and in it are frequently veins of calcarious Spar, Cauk, &c. which bear Lead Ore, though by no means so generally as the under-stratum Lime-stone.

It is necessary here to observe that each stratum is separated by a clay, sometimes a foot or more in thickness; and frequently layers of clay, a few inches thick, are found interjecting in various situations in the Lime-stone stratum, which is stratified, the others are not.

The Lime-stone stratum differs much; there are many quarries for Lime-stone in a square mile, all of which differ in some degree in their quality; some are entirely composed of marine shell, &c., while others are exceedingly hard, and contain but few; they make excellent Lime, and the use of it has greatly increased the cultivation of the mountains.

In this stratum, the greatest quantity of Lead ore is found in veins, which generally intersect the stratum at right angles. These veins are composed of Calcarious Spar, Cauk, and Kevil, with Lead Ore; they commonly appear at the surface, and are followed by miners until they judge whether it will answer their purpose; if they find it rich, they take the range of the vine with the compass, which is almost always here nearly east or west. They then form their judgment which way will be the most judicious to work the mine to the greatest advantage. They are subject to peculiar laws and customs, and a Bar Master,* who is an excellent miner, in whom great trust is reposed, and whose duty it is to settle disputes and distribute justice. When a vein is situated in an horizontal direction, which it often is, it is called a flat or pipe work.

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* Mine Master.

This stratum of various depths, is commonly separated by what is called the Toad-stone, which always cuts off the vein of Ore. The Toad-stone is of various thicknesses; it ranges under the Lime-stone alternately in this neighbourhood. It is of various colours, from the Bay-salt dark brown to a light-coloured Ochre, full of fine green spots. It does not effervesce with acids, has all the appearance of scoria; its pores are frequently filled up with red earth, Chalcedony, Zeolite, and calcarious Spar; and the clay that appears betwixt it and the *Lime-stone*, has the appearance of a half-vitrified substance, brittle, full of holes, and of various colours. The thickness of this stratum varies much in the distance *of a* mile. On Tideswell Moor, where this stratum intersected the vein that was worked in the incumbent stratum Lime-stone, and cut it off, the practical miners knew that by cutting through the Toad-stone stratum, they were sure to meet with the Lime-stone stratum underneath, and the vein of Ore they before had lost. One instance in Black Hillock mine is where they lost the vein of Ore by the Toad-stone cutting it off; they sunk in the Toad-stone 100 fathoms, and could not get through it, while the miners at a distance on each side, met with Toad-stone and sunk through it, being only a few fathoms in thickness, which was one reason the ingenious Mr. Whitehurst thought it to be a lava, issuing from a crater, and injected betwixt the Lime-stone stratum separating the whole by its expansive force, at the period of some violent convulsion, of which this neighbourhood shews so many strong appearances. The Toad-stone stratum contains no marine productions, no vegetable impressions, nor any thing that serves to prove it was formed at the same period, or by the same means the stratum below it and above it was formed. Its separating the veins of Ore and the stratum, are strong arguments to suppose a division has taken place in the Lime-stone stratum, independent of the entire difference of the component parts, and its singular various thicknesses.

In one mine on Tideswell Moor, and in Dirtlow Mine, near Castleton, the Toad-stone is said to bear Lead Ore, and the vein is worked in that substance. *Query.*—If this substance is a Toad-stone, I found pieces in it to effervesce with acids, and burnt to lime The situation of the vein of Ore in Dirtlow Mine, I went down to see, and did not on examination, find it to resemble what Mr. Whitehurst calls the Toad-stone; but miners here generally call any substance they do not know, by that name, which is the case in the above instance, it being a singular colour, and appears in a decomposed state. The Mime on Tideswell Moor, I did not examine. Toad-stone seldom forms fissures: after torrification, I found particles of it attracted by the magnet.

In the veins of Ore are generally found calcarious Crystallizations, Blend, native Oxide of Zinc, Galena Potter's Ore, (very poor in silver) attended sometimes with Manganese,. Carbonate of Lead, and Molbdate of Lead and a very great variety of Sulphate of Barytes crystallized with native sulphur, Blistered, fibrous, compact, &c., &c., also, Fluor in various states, and finely crystallized.— Clays and Calcarious Marls are found in various parts; the latter which may be made useful for manuring Land, Stalactites are found sometimes in small quantites; a variety of Bitumen and Quartz Crystals, perfect Hexagonal Prisms, and double piramids, are found imbeded in the Limestone detatched.

The mountain on which the blue Fluor is found, is very interesting to the naturalist; the mines in it are full of caverns; the walls throughout the country are full of fine petrifacations; the caverns contain fine Stalactites, Ochres, and varieties of Sulphuret of Iron; Argillaceous Iron Ores are found in the neighbourhood.

The strata, published by Brown and Co., with the collection of substances, the produce of that county, classed and arranged according to their affinities, give a better description of the Mineralogy than any traveller can make on a pursuit like mine, and which are to be acquired at their warehouse in

London or at Castleton or at their manufactory in Derby.

I meant to have given various sections of the strata in Derbyshire, and the analysis of its productions throughout the mineral kingdom; also a mineralogical map, laying down the situation of the mines; but finding that work is already begun by a gentleman more able to do it justice than myself, being more thoroughly conversant with the subject, I decline it, in hopes of being gratified by seeing such a publication soon brought forward,

But though I did not intend to depart from my plan any further than to inform the reader of the best market for the productions peculiar to the place I describe, yet I cannot forbear to extend the digression by observing that Castleton is also remarkable for a Peal of eight Bells, on much approved model, as is sufficiently evinced by their weight and tone, The tenor or largest bell is only 12 cwt., yet it is as deep in the scale as E, contrary to the generality of bells of the same key, which are seldom less than 24 cwt. Such however is their advantageous mode for viberating, that they afford an uncommon flow of sound. They are heard to as great distance as bells in general, and they are observed to continue sounding much longer than is usual in bells of the common model; they are besides allowed to have as fine tones as any bells known. They were cast by Mr James

Harrison, of Barton-upon-Humber, in Lincolnshire ; and this great improvement in the proportion of bells I understand, as been accomplished by the indefatigable and pertinaious study of the founder, accompanied with regular experiments of many years' continuance.

SACRED

TO THE MEMORY OF

JOHN MAWE, ESQ., LATE OF LONDON,

WHO DEPARTED THIS LIFE ON THE 26TH OF OCTOBER,

1829,

IN THE 63RD YEAR OF HIS AGE:

AND HIS REMAINS ARE INTERRED IN THE

PARISH CHURCH OF ST. MARY-LE-STRAND:—

IN CONFORMITY WITH HIS DESIRE

THAT SOME MEMORIAL MIGHT BE PRESERVED OF THE

AFFECTIONATE REGARD

WHICH HE HAD LONG CHERISHED FOR THE

INHABITANTS OF CASTLETON,

WHERE HE FIRST BECAME ATTACHED TO HIS FAVOURITE

STUDY—THE SCIENCE OF MINERALOGY,

HIS AFFLICTED WIDOW

HAS CAUSED THIS TABLET TO BE ERECTED

TO HIS MEMORY.

☞ E. Needham has been Agent to the above Gentleman upwards of Thirty years.

S. DODGE, PRINTER, STOCKPORT.

18 – [illegible]

14 [illegible]

[illegible]

6 –

9 –

2

10

15

7

15

THE FOLLOWING SUMS

TO BE

Paid to the Guide for Shewing the

CASTLETON CAVERN.

	S.	D.
One Person	2	6
Two Persons..	4	0
And for every Person above two.. ..	1	6

☞ SERVANTS ONE SHILLING EACH.

THE ABOVE CHARGES TO INCLUDE CANDLES.

	S.	D.	
Bengal Lights	0	6	each.
And Blasts, (if required).. ..	2	6	"

S. DODGE, PRINTER, STOCKPORT.